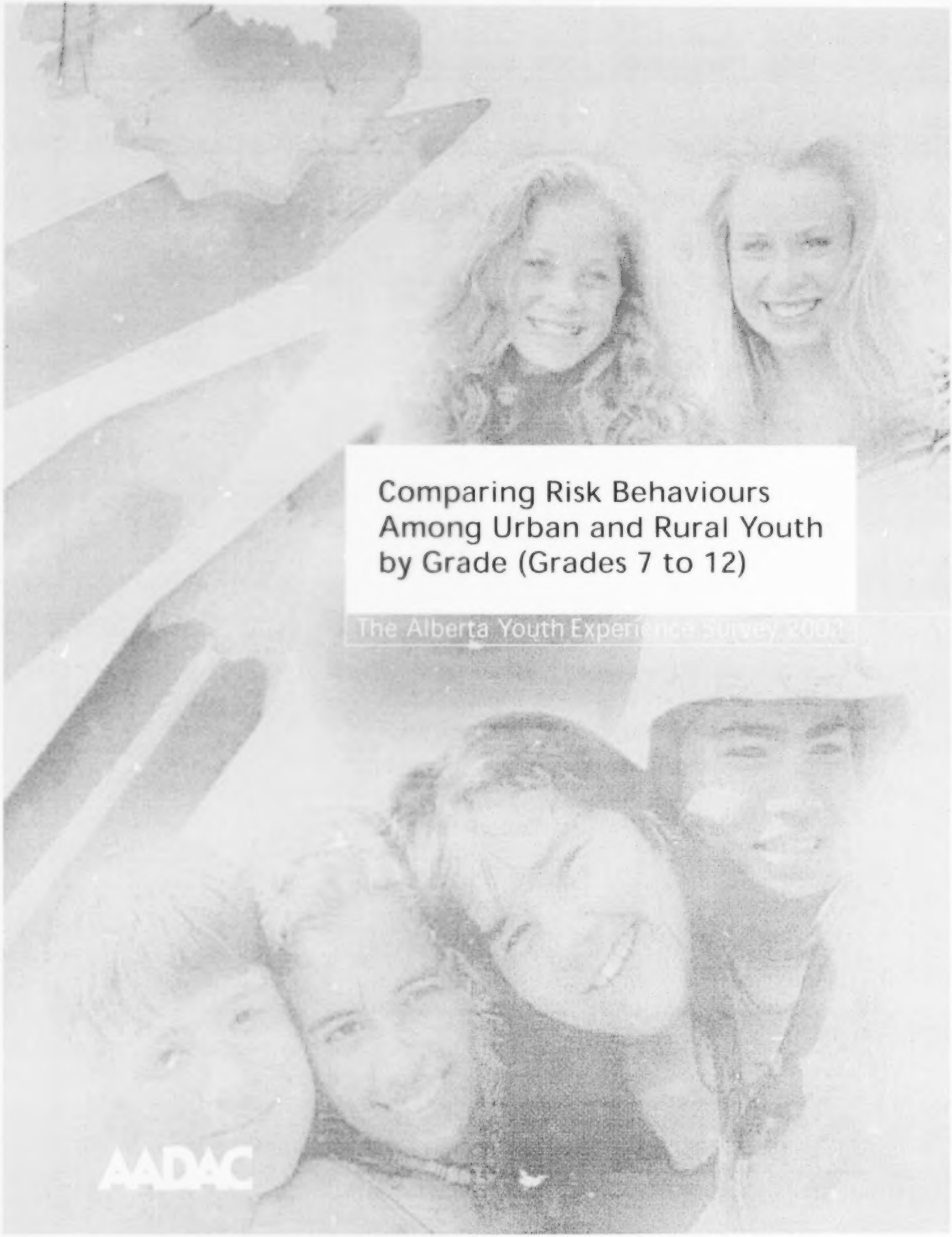

Comparing Risk Behaviours Among Urban and Rural Youth by Grade (Grades 7 to 12)

The Alberta Youth Experience Survey 2008

AADAC

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EXECUTIVE SUMMARY

This paper is a summary of one of a series of papers developed from The Alberta Youth Experience Survey 2002 (TAYES) (AADAC, 2003a; 2003b; 2003c). The focus of this paper is comparing urban and rural junior and senior high school students and their involvement in risk behaviours. Of specific interest was exploring the differences and similarities between urban and rural youth and the use of alcohol, tobacco, other drugs and gambling.

Although few major differences exist between risk behaviours of Alberta junior and senior high school students by location sizes or regions, a number of themes emerged from the results. Overall, there are more non-drinkers of alcohol in small towns and rural locations than other locations. Youths reported a higher percentage of abusing alcohol in Alberta's larger cities (Edmonton, Central or Red Deer area and Calgary) than youths in the South or North regions.

Findings on tobacco use revealed most Alberta youths do not smoke. Approximately 84% of Alberta youth had not smoked a cigarette in the last 12 months. However, the percentage of non-metro[1] (10.3%) and small town occasional smokers (25.7%) was different. What is surprising is the reverse is found when we look at every day tobacco users. A significant 45.4% of smokers use tobacco every day in non-metro areas while 23.1% are every day smokers in small towns.

Cannabis use is more frequent in larger Alberta cities than smaller cities or rural areas. The use of drugs other than cannabis, such as magic mushrooms or mescaline and club drugs (e.g., ecstasy or crystal meth), is sporadic across the province. The numbers were so low that comparisons could not be made by locations or regions. However, on an aggregate level this survey found 15.3% of high school students used magic mushrooms or mescaline and 7.6% of high school students used club drugs such as ecstasy or crystal meth.

Non-metro areas had the highest percentage of hazardous gamblers (15.1%) than any other location. Hazardous gamblers refer to "youths who gamble frequently with one problem or gamble less frequently with two or more problems" (AADAC 2002A:117) Non-metro locations also had a slightly higher percentage of non-problem gamblers (36.9%) than other locations (average 31.75%). There were significantly more non-gamblers outside of non-metro areas (average 59.7%) than in non-metro areas (47.3%).

[1] small non-metro city zones like Fort McMurray and Grande Prairie with populations of 20,000 to 49,000

INTRODUCTION

The Alberta Youth Experience Survey 2002 (TAYES) sought to answer questions about the proportion of Alberta youth who used alcohol, tobacco, or other drugs or gambled and the proportion of Alberta youth who used substances or participated in gambling in a harmful way. The survey also sought to investigate the factors that increased adolescents' protection from harmful substances, or increased their risk of substance use or abuse or gambling.

Three reports have been prepared based on TAYES: *the Summary Report*, the *Technical Report*, and the *Overview of Risk and Protective Factors*. This report is one of a series of special topical reports, which are intended to provide greater detail on TAYES results and relevant literature than is contained in the *Summary Report* (Alberta Alcohol and Drug Abuse Commission [AADAC], 2003a). The topical reports are intended for use by educators and addictions workers. The purpose of this report is to highlight urban and rural regional comparisons with respect to youth gambling and use of alcohol, tobacco and other drugs.

LITERATURE REVIEW

There has been a great deal of speculation and variation in findings when comparing urban and rural differences in alcohol, drug use and gambling. Many observations and opinions are based on perception or media hype (Bachman, O'Malley, Schulenberg, Johnston & Bryant, 2002). Most Albertans have heard stories about wild rural high school bush party where drinking and drug use appeared out of control. In Alberta's larger cities, there are a multitude of stories of rampant drug use in rave clubs and out-of-control drinking and behaviour in night hot spots. As a result, the public may believe prevalence to be higher than it truly is particularly with illegal drug use.

When research is conducted, it often seems contradictory. The National Center on Addiction and Substance Abuse (CASA) (2000) and Nyberg and McIntosh (1979) found the use of all drugs, including alcohol, much higher in rural areas than in urban areas for Grade 8 students. Johnston, O'Malley and Bachman (2001) found alcohol use to be higher for rural Grade 8 students than for urban eighth graders but the differences were much more modest than those found by CASA. Other investigations note that rates of use appear to be increasing in rural areas (Cronk & Sarvela, 1997). Other studies simply focus on one or the other such as DiNitto's (1982) and Donnemeyer and Park's (1995) work in rural America or Wichstrom and Tormod's (1996) research on urban problems with youth. The latter researchers see higher risks in urban centres.

In contrast to the work of Wichstrom and Tormod (1996), there is a smorgasbord of research focusing on a variety of risk behaviours of rural youth. Some of these include antecedents of rural youth alcohol use (Bloch, Crockett & Vicary, 1991), peer influence on rural youth (Pruitt, Kingery, Mirzaee, Heubergen & Hurley, 1991), general alcohol use in rural communities by high school students (Globetti, Alsikafi & Morse, 1978) and at-risk youth drinkers in rural communities (Booth, Kirchner, Fortney, Ross & Rost, 2000).

In reviewing this literature, what is clear is that there are no simple differences. Depending on the youth populations surveyed, the regions selected and the locations of the rural or urban areas, there is considerable diversity in alcohol, other drug use and gambling prevalence as well as risk and protective factors. The present investigation attempts to explore the differences and similarities between urban and rural youth living in Alberta in relation to risk behaviours.

METHODOLOGY

This report is based on secondary analysis of data collected for TAYES, 2002. Methods for the survey are reported in detail in *The Alberta Youth Experience Survey, 2002: Technical Report* (AADAC, 2003b).

Sample

The study was based on a school survey of 3,394 Alberta youth in grades 7 to 12 in October and November 2002. The sample was designed as a stratified random cluster sample with selection proportionate to classroom size. The sample was stratified by five regions aggregated from regional health authority boundaries as they existed in April 2002 and by school grade. The survey was administered in randomly selected classrooms in 89 schools in 39 school divisions throughout the province.

Ethics

Ethics approval was obtained from a duly constituted ethics review board consistent with the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (Alberta Heritage Foundation for Medical Research, 2001). The survey was conducted in compliance with the Health Information Act (2001) and the Freedom of Information and Protection of Privacy Act (1995). Active, informed parental consent was required. Youth and parent names were kept confidential by the schools that participated in the survey and research staff had no access to these names.

Questionnaire and Procedure

The questionnaire and survey processes were pre-tested in one school with students in grades 7 to 12 (the French language version of the questionnaire was pre-tested with a French immersion class). Research staff administered an 84-question survey. *The Alberta Youth Experience Survey, 2002: Technical Report* (AADAC, 2003b) outlines measures taken to reduce misrepresentation by students answering the questionnaire. The response rate of 52% is consistent with similar surveys using active informed consent.

The questionnaire was based on comparable studies conducted in other provinces and states. Indicators with a strong track record in forecasting future substance use and abuse were identified from the Ontario Student Drug Use Survey (OSDUS) (Adlaf & Paglia, 2001), the Monitoring the Future (MTF) survey (Johnston, O'Malley, & Bachman, 2001) and a previous Alberta survey (George, Munro & Huebert, 2002). The study's dependent measures are alcohol, tobacco, other drugs, and gambling use and abuse. The independent and co-varying measures in this study are urban and rural categories based on regions and locations.

All factors included in this study have been identified as important correlates because research literature demonstrates relationships between these factors and substance abuse. A balance was sought between covering the most important factors identified and keeping the number of survey items manageable. Survey items were selected from existing questionnaires from the Ontario Student Drug Use Survey [OSDUS] (Adlaf & Paglia, 2001), MTF (Johnston et al., 2001), Texas Commission Alcohol and Drug Abuse (TCADA) (Texas Commission on Alcohol and Drug Abuse, 20000, National Longitudinal Survey on Children and Youth (NLSCY), and Communities that Care surveys (Channing Bete Company, 2001). Where several measures were available, preference was given to those judged most easily read by youths, those used in Canadian studies, and those with better predictive power. The final set of questionnaire items was modified for readability prior to pre-testing.

Several pre-existing scales and newly created scales were used to measure the dependent and independent variables. For scales, cutoff points have been used rather than reporting the full range of scores. The cutoff points were determined based on quartile splits, midpoints, or cutoffs reported in the research literature.

In TAYES, youth were given a list of drugs and asked to identify which ones they had used during the last 12 months. In addition to asking which drugs were used, TAYES also inquired into the frequency at which they were used during the past year.

The most common drugs used by both users of one substance and users of more than one substance were examined for descriptive purposes.

Cannabis Dependence

A brief note needs to be made about the measurement of cannabis use given the significant percentage of youths using this drug. Three indicators of cannabis dependence were examined: (a) uncontrolled use, (b) sustained daily use, and (c) recent attempts to reduce use (Adlaf & Paglia, 2001). These categories are standard general measures for assessing dependence or addictive relationships in clinical addiction treatment settings. In addition, the classification of "*potential cannabis dependence*" was defined as a positive response to the uncontrolled use question and either the sustained daily use or the recent attempts to reduce questions. The percentage of users reporting that they received treatment for their use of cannabis during the past year was examined for both cannabis users and potentially dependent cannabis users.

Data Analysis

All percentages are based on weighted data for better representation of the Alberta youth population. The sample of 3,394 students represents over 263,000 Alberta students in grades 7 to 12. Please refer to *The Alberta Youth Experience Survey 2002: Technical Report* (AADAC, 2003b) for more details on the weighting strategy. Statistical tests to determine if relationships are significant enough to generalize to the larger population of Alberta youth were conducted using un-weighted data and a significance level of less than 0.0005. Missing values were not included in the analyses unless noted.

Age of onset-that is, age of first time substance use or first gambling experience-was not analysed for this paper. Ease of access was not included in the profile on grades. Please refer to *The Alberta Youth Experience Survey 2002: Technical Report* (AADAC, 2003b) for information on ease of access by grade level.

Relationship between Drug Use and Demographic Characteristics Among Alberta Youth

Youth were classified as either users or non-users of the various illicit drugs. Drug users were defined as those youth who reported using the substance one or more times during the last year. Chi-square and correlational analyses were conducted to determine if there were significant relationships between the use of drugs and the various demographic characteristics. The demographic variables examined for relationships were gender, grade level, living arrangement (both natural parents versus other), ethnicity (Aboriginal versus non-Aboriginal), youth's weekly income, region of Alberta, and location size.

Relationship Between Risk Factors and the Frequency of Use Among Alberta Youth

Correlation analyses were conducted to determine if there were significant relationships between risk factors and the frequency of drug use. The risk factors examined for relationships were as follows:

- Ease of access – Youth were asked to identify whether each substance was extremely difficult, difficult, easy, or extremely easy to obtain.
- Peer drug use behaviour – Youth were asked whether none, a few, most, or all of their peers (a) have tried cannabis, (b) use cannabis regularly, and (c) have tried drugs other than cannabis.
- Parental approval of drug use by youth – Youth were asked to rate whether their parents strongly disapprove, disapprove, neither approve nor disapprove, approve or strongly approve of drug use by the youth.

Including this summary on risk factors in this review raises the question of whether they are more evident in rural or urban areas or particular locations in the province.

Limitations

Methodological limitations of TAYES are identified in *The Alberta Youth Experience Survey 2002: Technical Report* (AADAC, 2003b). Only limitations relevant to this analysis are identified here.

A multi-stage stratified sample design requires weights to adjust the sample proportions to reflect the sub-population values in their true proportions. Implications of using weighted data are 1) if the sample is not representative of the strata, applying a weight factor will exaggerate the bias, and 2) using weighted data will increase the level of significance. As a result, frequencies reported are based on weighted data for better representation of the population while statistical tests were conducted on un-weighted data.

Where there was a low prevalence of use of some drugs combined with a small number of youth in some of the subgroups, statistical tests were not conducted. Significant proportional differences are identified for only those cases where there were at least 10 observed cases in each grouping.

RESULTS

Comparing Risk Behaviours Among Urban and Rural Youth

Table 1 provides a summary of illicit drug use by a number of demographic subgroups. When cannabis use and mushroom use (in the hallucinogen drug group) are compared across the five Alberta Regional Health Districts (North, Edmonton, Central, Calgary and South), there are no significant differences. The first number is the percentage of students in the region who use, the second statistic is our confidence rating. In the North, for example, we found that 23.2% of students used cannabis in the last year but our confidence levels reveal that it could be either 28.2% or 18.2%. There is thus considerable variability within each region.

Location sizes were also compared. Mid-size metro refers to medium metropolitan centres (population of 250,000 to 999,999). In Alberta, this includes cities like Calgary and Edmonton. Small-size metro refers to smaller metropolitan centres (population of 50,000 to 249,999). In Alberta, this includes cities like Red Deer and Medicine Hat. Non-metro refers to small non-metropolitan centres (population of 20,000 to 49,999). In Alberta, this includes cities like Fort McMurray and Grande Prairie. Small town refers to centres with a population of 2,500 to 29,999. In Alberta, this includes towns like Wainwright, Westlock, Lloydminster and Barrhead. Rural refers to centres with populations less than 2,500 (AADAC, 2003b).

As we can see from Table 1 there are much more dramatic and statistically significant differences based on other demographic subgroups. There is a dramatic rise, for example, in cannabis use when youth move from junior to senior high school. There is a significant difference in cannabis and mushroom use between Aboriginal and non-Aboriginal populations. Family structure is also related to higher rates of cannabis and mushroom use. Finally, the more income a youth earns, the greater the likelihood of using cannabis but not mushrooms. The latter is often cheaper than obtaining cannabis and may explain why there is a slightly higher percentage of youth using mushrooms who earn less money. Youth earning more money may prefer the more expensive but more predictable and mellow high of cannabis.

Table 1: Percentage of Alberta Youth Using Illicit Drugs by Demographic Subgroups

Demographic	Cannabis (%)	Cocaine (%)	Crack (%)	Hallucinogens (%)	Uppers (%)	Downers (%)	Club Drugs (%)	Mushrooms (%)
Grade								
7-9	11.8	0.5	0.8	1.6	2.1	1.7	2.7	5.0
10-12	41.9	5.1	4.7	6.1	5.6	2.9	7.6	15.3
Region								
North	23.2 +/- 5.0	-	-	-	-	-	-	7.5 +/- 2.6
Edmonton	31.1 +/- 6.6	-	-	-	-	-	-	10.2 +/- 3.7
Central	27.5 +/- 6.8	-	-	-	-	-	-	12.8 +/- 3.5
Calgary	30.9 +/- 11.8	-	-	-	-	-	-	12.8 +/- 7.3
South	17.3 +/- 4.7	-	-	-	-	-	-	5.8 +/- 2.2
Ethnicity								
Non-Aboriginal	26.8	-	-	-	-	-	-	9.8
Aboriginal	52.1	-	-	-	-	-	-	30.2
Living Arrangement								
Both Natural Parents	22.9	2.1	-	3.0	3.7	2.1	4.8	7.7
Other	39.1	5.1	-	6.2	4.6	2.9	6.5	17.0
Weekly Income								
Less than $5	13.9	-	-	0.0	0.0	-	0.0	5.7
$6 - $10	17.4	-	-	2.3	0.3	-	3.4	7.0
$11 - $20	25.0	-	-	0.5	1.8	-	3.0	7.3
$21 - $30	26.5	-	-	1.2	4.5	-	2.7	11.8
$31 - $40	28.5	-	-	3.1	14.4	-	6.2	4.3
$41 - $50	43.2	-	-	0.7	18.0	-	4.3	4.8
More than $50	57.7	-	-	25.1	4.0	-	15.9	31.7

Notable Differences

Alcohol Use

Although differences between urban and rural youth do not appear to be major, there are some interesting anomalies. There is a small difference in the percentage of non-drinkers by location. Youth from small metro (48.8%) and rural (48.9%) locations were more likely to be non-drinkers than youth in other locations (43.7%). Youths in urban locations of greater than 500,000 reported more signs of alcohol abuse (14.8%) than did youths in non-metro areas (9.8%). It may be that there are differences in protective factors between these areas in terms of family boundaries and availability that partially account for these differences.

The percentage of youths who reported signs of abusing alcohol in Edmonton (14.3%), Calgary (13.9%) and the Central region (13.6%) was notably higher than youths from the South (9.5%) and the North regions (11.2%). Cultural, family and religious protective factors may account for part of these differences (Rountree & Clayton, 1999; Donnermeyer & Park, 1995; Scheer, Borden & Donnermeyer, 2000; Spoth, Goldberg, Neppl, Trudeau & Ramisetty-Mikler, 2001).

Tobacco Use

Findings on tobacco use revealed most Alberta youths do not smoke. Approximately 84% of Alberta youth had not smoked a cigarette in the last 12 months. In terms of occasional tobacco use, there was no significant difference between mid-size metro (23.9%), small metro (24.8%) or rural areas (24.4%). However, the percentage of non-metro (10.3%) and small town (25.7%) occasional smokers was different. What is surprising is the reverse is found when we look at every day tobacco users. Of all smokers, 45.4% use tobacco every day in non-metro areas, while 23.1% are every day smokers in small towns.

Cannabis Use

This survey revealed that 27.6% of youth had used cannabis in the last 12 months. This drug continues to be popular and is second only to alcohol in frequency of use among youth. The most significant difference was found when comparing urban with rural regions. Approximately 32% of youth in urban areas with a population greater than 500,000 had tried or use cannabis compared o 19.6% of youth in rural areas. Availability and ease of access are two reasons for this difference (Adlaf & Paglia, 2001). The percentage of youth who had used or tried cannabis also varied by region. The highest percentage of youth having tried or used cannabis was in the Edmonton (31.1%) and Calgary (30.9%) regions. The lowest reported level of use was in southern Alberta (17.3%) (AADAC, 2003a). This difference may be in part due to a particular religious system that exists in some of the southern communities (McVey & Kalbach, 1995: 368).

Gambling

Overall, 58.8% of youths were non-gamblers ("youths who indicated no gambling behaviour", AADAC, 2003b:117) and an additional 31.7% were non-problem gamblers ("youths who gambled with 0 or 1 of 12 possible problems reported", AADAC 2003b:117). Almost 6% of youths were hazardous gamblers ("youths who gamble frequently with one problem or gamble less frequently with two or more problems", AADAC, 2003b:117) and 3.8% were potential problem gamblers ("youths who gamble daily or gamble weekly with two or more problems", AADAC 2003b:117). Of all gambling activities, playing scratch tabs (30.8%), playing cards for money (23.0%) and betting on sports events with a friend (21.1%) were the most popular gambling activities.

The interesting comparison is between non-metro and all other locations. Non-metro areas (small non-metro city zones like Fort McMurray and Grande Prairie with populations of 20,000 to 49,999) had the highest percentage of hazardous gamblers (15.1%). Non-metro locations also had a slightly higher percentage of non-problem gamblers (36.9%) than other locations (average 31.75%). There were significantly more non-gamblers outside of non-metro areas (average 59.7%) than in non-metro areas (47.3%) as well.

DISCUSSION

Stereotypes and beliefs about differences in risk behaviours between urban and rural youth have been exaggerated. This survey found few significant differences based on either location size or region. Where there were differences, they were not simple rural-urban splits. The differences appear to be aberrations within certain communities or regions rather than a clear urban and rural split.

Over the years, the amount of drug used and the types of drugs used have fluctuated (Bachman et al., 2002; White, 1998). In Alberta, there have been pockets of activity where drug use has risen and drug type has changed. In many cases, this is due to availability and illegal labs. For example, "speed," or amphetamine, was popular with a small percentage of users several years ago. Then ecstasy saw a rise in popularity. In 2003, we are dealing more often with crystal meth use. The percentage of youths using these drugs is still very small compared to youths using alcohol, cannabis and tobacco. TAYES found that 94% of Alberta youths did not use cocaine, crack, hallucinogens, inhalants, uppers, downers, club drugs, steroids, and heroin or opium (2003b).

Non-metro locations have a higher percentage of gamblers and hazardous gamblers than all other locations. These differences would suggest that non-metro locations are a potential target for enhanced services in prevention, information and treatment. Certainly for adults, employee assistance programs that deal with issues related to gambling and the use of alcohol and other drugs are readily available in these and other locations (AADAC Research Services, 2003c).

This is not to say drug use is not a concern, but in terms of priorities and focus, the results of this study would suggest rural and urban differences are not substantial. Overall, then, similar programs and prevention strategies could be offered to youth across the province, whether in urban or rural locations. Prevention strategies need to be targeted to the drugs used most by youths in Alberta (alcohol, tobacco, and cannabis) and, to a lesser degree, to gambling. With respect to the latter, it does appear that there are some locations in Alberta where enhanced prevention strategies might be considered.

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